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ABSTRACT

In order to gain some perspective on the present status of higher education facilities and maintenance activities, the Higher Education Panel recently conducted a survey of the opinions of college administrators with respect to their physical facility planning. The survey was designed to elicit opinions on the perceived adequacy of an institution's buildings and maintenance programs. The questionnaire for this survey was mailed to 645 members of the Panel. Ninety percent of the institutions surveyed returned completed questionnaires. Results are categorized according to implications of Occupational Safety and Health Act regulations, preventive maintenance activities, changes in plant operation and maintenance, and the impact of enrollment on physical plant planning. Results indicated that a number of specific trends do exist with respect to the adequacy of higher education facilities and maintenance planning. Statistical data are included. (MJM)

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College and University Facilities: Expectations of Space and Maintenance Needs for Fall 1974

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Elaine H. El-Khawas

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The Higher Education Panel is a survey research program established by the Council for the purpose of securing policy-related information quickly from representative samples of colleges and universities. *Higher Education Panel Reports* are designed to expedite communication of the Panel's survey findings to policy-makers in government, in the associations, and in educational institutions across the nation.

The Higher Education Panel's surveys on behalf of the Federal Government are conducted under grant support provided jointly by the National Science Foundation, the National Institutes of Health, and the U.S. Office of Education (NSF Grant GR-99).

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College and University Facilities: Expectations of Space and Maintenance Needs for Fall 1974

Elaine H. El-Khawas

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College and University Facilities: Expectations of Space and Maintenance Needs for Fall 1974

Elaine H. El-Khawas

College and university planning with respect to physical facilities has become an increasingly complex task in recent years. A number of trends -- from inflation and energy shortages to reduced levels or changing patterns of enrollment growth -- have in varying ways imposed new constraints on institutional plans and budgets with respect to physical space and maintenance needs. Recent governmental actions, including legislation on occupational safety and health, also have implications for an institution's physical plant and maintenance planning.

In order to gain some perspective on the present status of higher education facilities and maintenance activities, the Higher Education Panel recently conducted a survey of the opinions of college administrators with respect to their physical facility planning. The survey,[1] conducted at the request of the U.S. Office of Education, was designed to elicit opinions on the perceived adequacy of an institution's buildings and maintenance programs. It did not obtain specific data such as footage needing replacement or projected costs, but should usefully complement the more detailed surveys being conducted on the topic.[2]

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[1]This survey was conducted under grant support to the Higher Education Panel provided jointly by the National Science Foundation, the National Institutes of Health, and the U.S. Office of Education (NSF Grant GR-99).

[2]Very detailed and comprehensive surveys on this topic have been conducted by Higher Education Facilities Services, Incorporated (Raleigh, North Carolina), an agency of the Association of Executive Directors of Higher Education Facilities Commissions.

Methods

The Higher Education Panel is a survey research program established at the American Council on Education in 1971 for the purpose of conducting small-scale surveys on topics of general policy interest in higher education. The Panel is based on a network of campus representatives at 645 institutions broadly representative of all colleges and universities in the United States.

The questionnaire for this survey (see Appendix A) was mailed out on June 28, 1974 to all 645 members of the Panel. By August 1, the cut-off date for data collection, 90 percent of institutions (N=581) had returned completed questionnaires. Institutional respondents typically were vice presidents for planning, directors of institutional research or, in many cases, college presidents.

Institutions were classified by type and control into six categories that formed the basis for most of the tabulations and analysis presented in this report. The pattern of response among these institutional categories is shown in Table 1.

Results

Institutions were queried about a variety of issues potentially affecting their physical facilities and maintenance programs. In this report, responses are compared among types of institutions for each issue. In addition, because of concern over special problems facing institutions undergoing changes in their enrollment, separate presentations are made for institutions expecting increased, decreased, and relatively stable enrollments this fall.

Amount of Space Relative to Needs

Institutions provided assessments of the adequacy of their space devoted to academic and nonacademic uses. As can be seen from Table 2, excess space was a problem that rarely affected universities and was of concern primarily among private two- and four-year colleges. Substantial proportions of both of the latter types of institution reported at least some excess academic space (28 and 19 percent, respectively) and nonacademic space (49 and 30 percent, respectively) relative to their actual needs. Notably, there generally was a greater excess of nonacademic than academic space.

Overcrowding of academic and nonacademic space appears to be a frequent problem, particularly in terms of academic space at public institutions: fully 74 percent of public universities reported that their academic space was at least somewhat overcrowded. Another perspective on the apparent imbalance among institutions between needs and facilities is provided by the fact that only among private two- and four-year colleges did a majority of institutions feel their academic space was ample for their needs.

In a more specific question, institutional respondents were asked to pinpoint any serious deficiencies or excesses. Although, in general, only small proportions of institutions characterized their problems as serious (Table 3), the pattern of response varied by type of institution. Sizeable proportions of public universities reported serious deficiencies for most specific uses. In contrast, deficiencies were infrequently reported by private two-year colleges.

Responses also varied according to specific use. Deficiencies in classroom space, teaching laboratories, and space for student services were most frequently reported by public two-year colleges and public universities. Excesses in student housing were reported by more than 15 percent of private two-year colleges, public and private four-year colleges and by public universities. Lack of research and library space were serious problems at more than 40 percent of public universities but were less often mentioned by other institutions.

In contrast, lack of sufficient office space was a general problem. This was particularly true at public and private universities but occurred for most other types of institution as well.

Physical Condition of Facilities

Institutions were asked to characterize the condition of their physical plant by apportioning their space among a number of broad descriptive categories that had been provided (see question six, Appendix A). Responses to this item are reported in terms of the mean response within each institutional type. As can be seen, institutional respondents typically felt that most of their physical plant was satisfactory in its present condition (see Table 4). The mean percentage of space reported as satisfactory ranged from 71.0 percent for public universities to 83.0 percent for public two-year colleges.

In contrast, the mean amount of space that needed renovation varied between a low of 6.9 percent at public two-year colleges to a high of 19.7 percent at private universities. Similarly, the amount of space needing replacement varied narrowly between a low of 4.3 percent at private four-year colleges to a high figure of 7.4 percent at public universities. Institutions generally felt that very little space, typically about one percent, could be eliminated (Table 4).

As a separate question, institutional respondents were asked to estimate what percentage of their total space would more adequately meet their needs if converted for another use. The response was rather uniform across types of institution: the mean percentage of space that could be so converted was typically about 7 to 9 percent.

Implications of OSHA Regulations

A relatively unexplored issue that will be of increasing concern to higher education institutions in the future relates to their need to conform to the regulations promulgated in accordance with the Occupational Safety and Health Act. A number of observers have predicted that colleges and universities will eventually face costly and difficult renovation and new purchases in order to remove hazards specified by the OSHA regulations. A preliminary survey conducted by the National Association of College and University Business Officers had suggested that the costs of OSHA compliance might range between 1 and 10 percent of plant replacement cost.

Opinion responses to a question in this survey suggest that most institutions have begun to evaluate seriously the implications of OSHA regulations for their physical plant. For all institutions reporting, 87 percent indicated that they had begun to evaluate OSHA's potential impact; of these, 33 percent predicted substantial costs of compliance, 41 percent predicted moderate costs, and 26 percent predicted that they would face minimal costs. Assessments varied by type of institution, however (see Table 5). Notably, respondents at 71 percent of public universities expected that the cost of compliance could be substantial for their institutions. Substantial costs were also expected by 40 percent of respondents at public four-year colleges and by 32 percent of respondents at private universities. In contrast, only 8 percent of public two-year colleges

expected substantial costs in order to bring their facilities into compliance with OSHA regulations.

Preventive Maintenance Activities

Preventive maintenance activities are often thought to be the type of maintenance most likely to be cut back or deferred when an institution or organization faces financial pressures. Institutional expectations about possible cutbacks in preventive maintenance activities may thus serve as a rough indicator of the extent of financial pressure felt by institutions. Table 6 summarizes the responses of institutions to a question about their schedule of preventive maintenance activity.

Compared to other types of institutions, public two-year colleges are quite distinctive on this issue. Seventy-five percent of public two-year colleges expected to carry out preventive maintenance activity on a timely schedule, only 20 percent expected some curtailment of activity, and barely 5 percent were expecting to defer this type of maintenance. In contrast, a response expecting a timely schedule for preventive maintenance was much less prevalent among other types of institutions: between 44 and 55 percent of institutions in each category expected to maintain a timely schedule. Similarly, about a third of institutions in all other categories expected some curtailment of preventive maintenance activity and the proportion expecting largely to defer such activity varied between 13 and 21 percent.

Changes in Plant Operation and Maintenance

Institutions were asked to indicate any changes they anticipated in a number of specific maintenance operations. For twenty-three separate categories of maintenance (see question 9, Appendix A), respondents noted whether they expected their institution's level of activity would increase or decrease during the 1974-75 academic year. These responses are summarized in Table 7.

In general, only a small proportion of institutions expected any change in level of activity. It appears that anticipated changes were reported somewhat more frequently by public universities and public four-year colleges than by other types of institution; there was much variation according to specific maintenance category, however.

Anticipated changes in level of activity centered on a number of specific maintenance activities. Sizeable proportions -- between 45 and 61 percent for differing types of institution -- expected changes in their scheduled operations for major repairs or renovation. Institutions differed as to whether their activities would increase or decrease, however. Another general category of changed activity involved comformity with Occupational Safety and Health Act regulations; the proportion of institutions expecting to increase their level of anticipated activity in this area ranged between 29 and 56 percent.

Notably, universities generally expected to lower their level of utility use. As much as 40 percent of public universities and 46 percent of private universities reported a likely decrease in their use of gas, electricity, water, etc. in the coming year.

Impact of Enrollment on Physical Plant Planning

In order to assess the impact of differing enrollment trends on institutional needs and planning with respect to physical facilities and maintenance, survey data were organized according to whether institutions expected to experience increased or decreased enrollments in fall 1974 or instead expected relatively constant enrollment. As can be seen (Table 8), the private sector generally anticipated decreased enrollment to a greater extent than the public sector. The specific pattern of expectation varied substantially by type of institution, however. Two-thirds of public two-year colleges

expected increased fall 1974 enrollments as compared to their fall 1973 levels of enrollment. In contrast, 61 percent of private universities expected largely the same levels of enrollment this fall. Anticipated decreases in enrollment were reported primarily at private two- and four-year colleges.

Tables 9 through 14 summarize the tabulations of survey responses for institutions expecting increased enrollment (N=227), decreased enrollment (N=91) and relatively constant levels of enrollment (N=256). In general, it appears that decreased enrollments are expected to have a considerable impact on an institution's physical facility planning and activity. Compared to other institutions, larger proportions of those colleges and universities expecting decreased fall enrollment reported excess space (Table 9), plans to curtail or defer preventive maintenance (Table 13), and probable decreases in certain specific areas of plant operation and maintenance (Table 14).

In contrast, institutions expecting increased enrollments differed only slightly from those institutions expecting relatively stable enrollment levels. The main impact of increased enrollment appears in terms of a greater likelihood of overcrowding (Table 9) and decreases in the level of a number of specific maintenance activities (Table 14).

Conclusion

According to responses provided by college administrators at a broadly representative sample of 581 colleges and universities across the United States, it appears that a number of specific trends do exist with

respect to the adequary of higher education facilities and maintenance planning. Especially notable were differences according to type of institution and according to whether institutions were expecting changes in enrollment for fall 1974. These survey findings, which summarize the views of college administrators on a number of specific issues, should effectively contribute to the general need for perspective on the current status of higher education facilities and maintenance planning.

Tables

Table 1

Distribution of Survey Respondents and the
Population of Institutions of Higher Education
by Type and Control

Reporting Category	Number of Institutions			Response Rate
	Population[a]	Panel	Respondents	
Public Universities	98	95	88	93%
Private Universities	65	63	57	90%
All Other Public Four-Year Institutions	451	102	86	84%
All Other Private Four-Year Institutions	1253	284	258	91%
Public Two-Year Colleges	893	63	60	95%
Private Two-Year Colleges	256	38	32	84%
Total	3016	645	581	90%

[a]Based on Fall 1973 Education Directory data file for the aggregate United States.

Table 2

Assessment of Academic and Nonacademic Space Needs
by Type of Institution
(in percentages)

Assessment of Space Availability	Public 2 Year Colleges	Private 2 Year Colleges	Public 4 Year Colleges	Private 4 Year Colleges	Public Universities	Private Universities
Academic Space is:						
Considerably Overcrowded	12	0	9	2	14	2
Somewhat Overcrowded but manageable	42	9	37	28	60	54
Ample	33	63	44	51	25	40
Somewhat in Excess of Anticipated Need	13	19	8	17	1	4
Considerably in Excess Of Need	0	9	2	2	0	0
Total Percentage	100%	100%	100%	100%	100%	100%
Total Number of Institutions	(60)	(32)	(86)	(256)	(87)	(57)
Nonacademic Space is:						
Considerably Overcrowded	17	6	12	6	5	11
Somewhat Overcrowded but Manageable	23	16	30	28	44	39
Ample	47	29	40	36	37	41
Somewhat in Excess of Anticipated Need	10	39	15	21	12	7
Considerably in Excess Of Need	3	10	3	9	2	2
Total Percentage	100%	100%	100%	100%	100%	100%
Total Number of Institutions	(58)	(31)	(86)	(253)	(86)	(56)

Table 3

Serious Deficiencies or Excesses in Space Needs

by Type of Institution
(in Percentages)

Type of Space Use and Level of Availability	Public 2 Year Colleges	Private 2 Year Colleges	Public 4 Year Colleges	Private 4 Year Colleges	Public Universities	Private Universities
Classrooms:						
Deficiencies	25	3	17	9	31	14
Excesses	8	6	7	10	6	5
Neither	67	91	76	81	63	81
Total Percentage	100%	100%	100%	100%	100%	100%
Total Number of Institutions	(60)	(32)	(86)	(258)	(88)	(57)
Teaching Laboratories and Shops:						
Deficiencies	32	6	28	13	40	12
Excesses	5	6	7	6	7	0
Neither	63	88	65	81	53	88
Total Percentage	100%	100%	100%	100%	100%	100%
Total Number of Institutions	(60)	(32)	(86)	(258)	(88)	(57)
Research Space:						
Deficiencies	2	0	30	9	41	19
Excesses	0	0	5	3	1	2
Neither	98	100	65	88	58	79
Total Percentage	100%	100%	100%	100%	100%	100%
Total Number of Institutions	(60)	(32)	(86)	(258)	(88)	(57)
Library and Study Space:						
Deficiencies	22	9	24	22	44	31
Excesses	3	3	6	5	1	2
Neither	75	88	70	73	55	67
Total Percentage	100%	100%	100%	100%	100%	100%
Total Number of Institutions	(60)	(32)	(86)	(258)	(88)	(57)
Office Space						
Deficiencies	32	6	35	25	48	42
Excesses	3	0	5	5	2	2
Neither	65	94	60	70	50	56
Total Percentage	100%	100%	100%	100%	100%	100%
Total Number of Institutions	(60)	(32)	(86)	(258)	(88)	(57)
Student Services Space						
Deficiencies	30	16	23	19	24	16
Excesses	0	0	2	5	1	2
Neither	70	84	75	76	75	82
Total Percentage	100%	100%	100%	100%	100%	100%
Total Number of Institutions	(60)	(32)	(86)	(258)	(88)	(57)
Student Housing						
Deficiencies	8	9	14	17	17	30
Excesses	5	22	16	22	19	5
Neither	87	69	70	61	64	65
Total Percentage	100%	100%	100%	100%	100%	100%
Total Number of Institutions	(60)	(32)	(86)	(258)	(88)	(57)
Other Space						
Deficiencies	8	9	13	9	16	14
Excesses	3	3	0	1	0	0
Neither	89	88	87	90	84	86
Total Percentage	100%	100%	100%	100%	100%	100%
Total Number of Institutions	(60)	(32)	(86)	(258)	(88)	(57)

Table 4

Assessment of Physical Condition of Facilities
by Type of Institution
(Means)

Assessment of Physical Condition[a]	Public 2 Year Colleges	Private 2 Year Colleges	Public 4 Year Colleges	Private 4 Year Colleges	Public Universities	Private Universities
Percentage of Total Space That Is Satisfactory In Its Present Condition						
Mean	83.0	77.6	76.6	77.4	71.0	73.4
Total Number of Institutions	(55)	(28)	(85)	(242)	(86)	(56)
Percentage of Total Space That Is Unsatisfactory and Should Be Renovated						
Mean	6.9	11.6	13.8	13.3	16.4	19.7
Total Number of Institutions	(55)	(30)	(84)	(246)	(86)	(56)
Percentage of Total Space That Is Unsatisfactory and Should Be Replaced						
Mean	6.1	5.0	6.7	4.3	7.4	5.1
Total Number of Institutions	(54)	(30)	(83)	(240)	(86)	(55)
Percentage of Total Space That Is Unsatisfactory and Can Be Eliminated						
Mean	0.8	0.3	1.5	1.0	1.5	1.1
Total Number of Institutions	(52)	(27)	(82)	(238)	(85)	(55)
Percentage of Total Space That Could Be Converted For More Adequate Use						
Mean	9.2	8.7	7.1	8.8	8.7	7.8
Total Number of Institutions	(28)	(14)	(53)	(142)	(54)	(36)

[a]The first four items are taken from question #6 of the questionnaire; on these items, responses of individual institutions added to 100 percent. Responses on conversion of space are taken from a separate item on the questionnaire.

Table 5

Implications of the
Occupational Safety and Health Act
by Type of Institution
(In Percentages)

Institutional Reaction	Public 2 Year Colleges	Private 2 Year Colleges	Public 4 Year Colleges	Private 4 Year Colleges	Public Universities	Private Universities
Institution Has Begun to Evaluate the Implications of OSHA Regulations:						
Yes	93	77	86	85	93	93
No	7	23	14	15	7	7
Total Percentage	100%	100%	100%	100%	100%	100%
Total Number of Institutions	(59)	(30)	(83)	(256)	(84)	(55)
Of Those That Have Begun an Evaluation, Cost of Compliance Is Expected to Be:						
Minimal	46	39	19	32	6	13
Moderate	46	39	41	44	23	55
Substantial	8	22	40	24	71	32
Total Percentage	100%	100%	100%	100%	100%	100%
Total Number of Institutions	(54)	(23)	(68)	(213)	(79)	(47)

Table 6

Expectations About Preventive Maintenance Activities
by Type of Institution
(In Percentages)

Expectations	Public 2 Year Colleges	Private 2 Year Colleges	Public 4 Year Colleges	Private 4 Year Colleges	Public Universities	Private Universities
Preventive Maintenance During 1974-75 Will Be:						
Largely Deferred	5	20	16	13	14	21
Curtailed Somewhat	20	33	39	32	35	35
Carried Out On a Timely Schedule	75	47	45	55	51	44
Total Percentage	100%	100%	100%	100%	100%	100%
Total Number of Institutions	(60)	(30)	(85)	(257)	(88)	(57)

Table 7

Anticipated Changes in Level of Activity

for Plant Operation and Maintenance

by Type of Institution
(In Percentages)

Type of Activity and Direction Of Change	Public 2 Year Colleges	Private 2 Year Colleges	Public 4 Year Colleges	Private 4 Year Colleges	Public Universities	Private Universities
Interior and Exterior Maintenance						
Increase	20	25	20	24	17	12
Decrease	8	6	19	10	19	18
Same	72	69	61	66	64	70
Total Percentage	100%	100%	100%	100%	100%	100%
Total Number of Institutions	(60)	(32)	(84)	(257)	(88)	(57)
Maintenance of Classroom Furniture and Equipment						
Increase	18	25	17	12	11	7
Decrease	15	6	25	14	20	20
Same	67	69	58	74	69	73
Total Percentage	100%	100%	100%	100%	100%	100%
Total Number of Institutions	(60)	(32)	(84)	(257)	(86)	(55)
Major Repairs or Renovation						
Increase	27	16	27	25	18	27
Decrease	18	34	32	26	30	34
Same	55	50	41	49	52	39
Total Percentage	100%	100%	100%	100%	100%	100%
Total Number of Institutions	(60)	(32)	(84)	(256)	(88)	(56)
Replacement of Maintenance Equipment						
Increase	13	10	17	9	9	7
Decrease	17	13	23	17	20	14
Same	70	77	60	74	71	79
Total Percentage	100%	100%	100%	100%	100%	100%
Total Number of Institutions	(60)	(31)	(83)	(255)	(88)	(57)
Building Maintenance Personnel						
Increase	25	13	23	12	16	7
Decrease	8	9	12	12	16	19
Same	67	78	65	76	68	74
Total Percentage	100%	100%	100%	100%	100%	100%
Total Number of Institutions	(60)	(32)	(84)	(256)	(88)	(57)
Interior Maintenance of Utility System						
Increase	15	6	13	16	17	32
Decrease	0	6	5	2	7	3
Same	85	88	82	82	76	65
Total Percentage	100%	100%	100%	100%	100%	100%
Total Number of Institutions	(59)	(31)	(85)	(255)	(88)	(57)
Exterior Maintenance of Utility System						
Increase	15	3	16	13	19	27
Decrease	2	3	5	3	7	4
Same	83	94	79	84	74	69
Total Percentage	100%	100%	100%	100%	100%	100%
Total Number of Institutions	(59)	(32)	(81)	(252)	(88)	(56)
Maintenance of Central Utility Plants						
Increase	12	3	16	13	23	23
Decrease	0	3	2	3	9	4
Same	88	94	82	84	68	73
Total Percentage	100%	100%	100%	100%	100%	100%
Total Number of Institutions	(57)	(30)	(77)	(231)	(86)	(56)

Table 7 (Con't).

Anticipated Changes in Level of Activity
for Plant Operation and Maintenance
by Type of Institution
(In Percentages)

Type of Activity and Direction Of Change	Public 2 Year Colleges	Private 2 Year Colleges	Public 4 Year Colleges	Private 4 Year Colleges	Public Universities	Private Universities
Use of Gas, Electricity, Water, Etc.						
Increase	22	12	33	19	26	28
Decrease	22	25	21	28	40	46
Same	56	63	46	53	34	26
Total Percentage	100%	100%	100%	100%	100%	100%
Total Number of Institutions	(59)	(32)	(85)	(257)	(87)	(57)
Utilities Maintenance Personnel						
Increase	14	9	19	7	11	7
Decrease	3	3	3	6	7	9
Same	83	88	78	87	82	84
Total Percentage	100%	100%	100%	100%	100%	100%
Total Number of Institutions	(59)	(32)	(85)	(254)	(88)	(57)
Landscape and Grounds Maintenance						
Increase	27	19	30	20	21	19
Decrease	10	23	14	11	24	14
Same	63	58	56	69	55	67
Total Percentage	100%	100%	100%	100%	100%	100%
Total Number of Institutions	(60)	(31)	(84)	(255)	(87)	(57)
Maintenance of Roads, Walkways						
Increase	28	16	20	20	14	16
Decrease	8	16	12	10	18	12
Same	64	68	68	70	68	72
Total Percentage	100%	100%	100%	100%	100%	100%
Total Number of Institutions	(60)	(31)	(84)	(255)	(87)	(57)
Grounds Maintenance Equipment						
Increase	12	3	9	11	9	10
Decrease	8	7	18	14	22	18
Same	80	90	73	75	69	72
Total Percentage	100%	100%	100%	100%	100%	100%
Total Number of Institutions	(60)	(30)	(84)	(255)	(88)	(57)
Grounds Maintenance Personnel						
Increase	13	7	14	9	11	5
Decrease	10	3	16	11	16	9
Same	77	90	70	80	73	86
Total Percentage	100%	100%	100%	100%	100%	100%
Total Number of Institutions	(60)	(31)	(84)	(254)	(88)	(56)
Campus Security and Safety						
Increase	19	19	21	28	27	29
Decrease	5	6	2	2	10	0
Same	76	75	77	70	63	71
Total Percentage	100%	100%	100%	100%	100%	100%
Total Number of Institutions	(58)	(32)	(85)	(258)	(87)	(56)
Maintenance of Security and Safety Equipment						
Increase	12	16	20	20	25	30
Decrease	2	0	2	0	2	0
Same	86	84	78	80	73	70
Total Percentage	100%	100%	100%	100%	100%	100%
Total Number of Institutions	(58)	(32)	(85)	(257)	(87)	(56)

Table 7 (Con't)

Anticipated Changes in Level of Activity
for Plant Operation and Maintenance
by Type of Institution
(In Percentages)

Type of Activity and Direction Of Change	Public 2 Year Colleges	Private 2 Year Colleges	Public 4 Year Colleges	Private 4 Year Colleges	Public Universities	Private Universities
Maintenance of Security and Safety Vehicles						
Increase	5	7	16	10	9	9
Decrease	5	4	5	3	7	4
Same	90	89	79	87	84	87
Total Percentage	100%	100%	100%	100%	100%	100%
Total Number of Institutions	(56)	(28)	(82)	(245)	(85)	(54)
Fire Department and Security Personnel						
Increase	7	7	20	8	14	15
Decrease	4	6	2	2	11	4
Same	89	87	78	90	75	81
Total Percentage	100%	100%	100%	100%	100%	100%
Total Number of Institutions	(55)	(30)	(82)	(244)	(85)	(54)
Conformity With OSHA Regulations						
Increase	31	29	45	42	56	56
Decrease	2	0	1	1	5	0
Same	67	71	54	57	39	44
Total Percentage	100%	100%	100%	100%	100%	100%
Total Number of Institutions	(57)	(31)	(80)	(247)	(82)	(55)
Level of Custodial Services						
Increase	15	9	18	12	11	12
Decrease	7	9	14	11	24	21
Same	78	82	68	77	65	67
Total Percentage	100%	100%	100%	100%	100%	100%
Total Number of Institutions	(60)	(32)	(85)	(258)	(88)	(57)
Garbage and Trash Disposal						
Increase	3	6	11	8	13	9
Decrease	2	0	2	2	2	3
Same	95	94	87	90	85	88
Total Percentage	100%	100%	100%	100%	100%	100%
Total Number of Institutions	(60)	(32)	(85)	(258)	(88)	(57)
Costs of Custodial Equipment						
Increase	17	6	13	11	15	21
Decrease	5	3	9	8	20	11
Same	78	91	78	81	65	68
Total Percentage	100%	100%	100%	100%	100%	100%
Total Number of Institutions	(60)	(32)	(85)	(257)	(88)	(57)
Custodial Personnel						
Increase	20	10	14	10	15	5
Decrease	9	3	9	14	20	23
Same	71	87	77	76	65	72
Total Percentage	100%	100%	100%	100%	100%	100%
Total Number of Institutions	(59)	(31)	(85)	(258)	(88)	(57)

Table 8

Expected Change in Fall 1974 Enrollment

by Type of Institution
(In Percentages)

Expectations	Public 2 Year College	Private 2 Year College	Public 4 Year College	Private 4 Year College	Public University	Private University
Compared to Fall 1973, Enrollment for Fall 1974 is Expected:						
To Increase[a]	68	47	47	31	44	25
To Decrease[a]	2	34	15	20	8	14
To be Largely the Same	30	19	38	49	48	61
Total Percentage	100%	100%	100%	100%	100%	100%
Total Number of Institutions	(60)	(32)	(85)	(257)	(86)	(57)

[a]by at least two percent.

Table 9

Assessment of Academic and Nonacademic Space Needs
by Expected Change in Fall Enrollment
(In Percentages)

Assessment of Space Availability	Institutions Expecting: Increased Enrollment	Decreased Enrollment	Relatively Constant Enrollment
Academic Space Is:			
Considerably Overcrowded	9	1	6
Somewhat Overcrowded but manageable	45	16	38
Ample	36	56	47
Somewhat In Excess of Anticipated Need	10	23	9
Considerably In Excess Of Need	2	4	0
Total Percentage	100%	100%	100%
Total Number of Institutions	(227)	(91)	(256)
Nonacademic Space Is:			
Considerably Overcrowded	14	2	5
Somewhat Overcrowded but Manageable	41	9	30
Ample	33	33	44
Somewhat In Excess of Anticipated Need	10	38	17
Considerably In Excess Of Need	4	18	4
Total Percentage	100%	100%	100%
Total Number of Institutions	(222)	(89)	(256)

Table 10

Serious Deficiencies or Excesses in Space Needs

by Expected Change in Fall Enrollment
(In Percentages)

Type of Space Use and Level of Availability	Institutions Expecting: Increased Enrollment	Decreased Enrollment	Relatively Constant Enrollment
Classrooms:			
Deficiencies	22	6	12
Excesses	7	16	6
Neither	71	78	82
Total Percentage	100%	100%	100%
Total Number of Institutions	(227)	(91)	(259)
Teaching Laboratories and Shops:			
Deficiencies	29	7	18
Excesses	7	13	2
Neither	64	80	80
Total Percentage	100%	100%	100%
Total Number of Institutions	(227)	(91)	(259)
Research Space:			
Deficiencies	19	9	17
Excesses	3	8	1
Neither	78	83	82
Total Percentage	100%	100%	100%
Total Number of Institutions	(227)	(91)	(259)
Library and Study Space:			
Deficiencies	27	19	27
Excesses	4	10	1
Neither	69	71	72
Total Percentage	100%	100%	100%
Total Number of Institutions	(227)	(91)	(259)
Office Space			
Deficiencies	34	18	33
Excesses	4	12	1
Neither	62	70	66
Total Percentage	100%	100%	100%
Total Number of Institutions	(227)	(91)	(259)
Student Services Space			
Deficiencies	24	14	19
Excesses	2	11	1
Neither	74	75	80
Total Percentage	100%	100%	100%
Total Number of Institutions	(227)	(91)	(259)
Student Housing			
Deficiencies	23	5	14
Excesses	10	42	16
Neither	67	53	70
Total Percentage	100%	100%	100%
Total Number of Institutions	(227)	(91)	(259)
Other Space			
Deficiencies	10	6	14
Excesses	1	4	0
Neither	89	90	86
Total Percentage	100%	100%	100%
Total Number of Institutions	(227)	(91)	(259)

Table 11

Assessment of Physical Condition of Facilities
by Expected Change in Fall Enrollment
(Means)

Assessment of Physical Condition[a]	Institutions Expecting: Increased Enrollment	Decreased Enrollment	Relatively Constant Enrollment
Percentage of Total Space That is Satisfactory in Its Present Condition:			
Mean	76.6	77.6	76.0
Total Number of Institutions	(213)	(89)	(246)
Percentage of Total Space That is Unsatisfactory and Should Be Renovated			
Mean	13.3	10.9	15.1
Total Number of Institutions	(219)	(90)	(244)
Percentage of Total Space That is Unsatisfactory and Should Be Replaced			
Mean	6.5	4.7	4.8
Total Number of Institutions	(214)	(88)	(242)
Percentage of Total Space That is Unsatisfactory and Can Be Eliminated			
Mean	1.1	1.6	0.9
Total Number of Institutions	(208)	(87)	(240)
Percentage of Total Space That Could Be Converted for More Adequate Use			
Mean	8.5	9.7	8.0
Total Number of Institutions	(118)	(48)	(157)

[a]The first four items are taken from question #6 of the questionnaire; on these items, responses of individual institutions added to 100 percent. Responses on conversion of space are taken from a separate item on the questionnaire.

Table 12

Implications of the
Occupational Safety and Health Act
by Expected Change in Fall Enrollment
(In Percentages)

Institutional Response	Institutions Expecting: Increased Enrollment	Decreased Enrollment	Relatively Constant Enrollment
Institution Has Begun to Evaluate the Implications of OSHA Regulations:			
Yes	86	86	89
No	14	14	11
Total Percentage	100%	100%	100%
Total Number of Institutions	(220)	(89)	(254)
Of Those That Have Begun an Evaluation, Cost of Compliance Is Expected to Be:			
Minimal	30	26	23
Moderate	41	42	41
Substantial	29	32	36
Total Percentage	100%	100%	100%
Total Number of Institutions	(185)	(76)	(219)

Table 13

Expectations About Preventive Maintenance Activities

by Expected Change in Fall Enrollment
(In Percentages)

Expectations	Institutions Expecting: Increased Enrollment	Decreased Enrollment	Relatively Constant Enrollment
Preventive Maintenance During 1974-75 Will Be:			
Largely Deferred	10	13	17
Curtailed Somewhat	32	45	30
Carried Out On a Timely Schedule	58	42	53
Total Percentage	100%	100%	100%
Total Number of Institutions	(225)	(90)	(258)

Table 14

Anticipated Changes in Level of Activity

for Plant Operation and Maintenance

by Expected Change in Fall Enrollment
(In Percentages)

Type of Activity and Direction Of Change	Institutions Expecting: Increased Enrollment	Decreased Enrollment	Relatively Constant Enrollment
Interior and Exterior Maintenance			
Increase	26	17	18
Decrease	12	21	12
Same	62	62	70
Total Percentage	100%	100%	100%
Total Number of Institutions	(226)	(91)	(257)
Maintenance of Classroom Furniture and Equipment			
Increase	16	9	14
Decrease	11	26	19
Same	73	65	67
Total Percentage	100%	100%	100%
Total Number of Institutions	(224)	(91)	(255)
Major Repairs or Renovation			
Increase	25	16	26
Decrease	25	40	26
Same	50	44	48
Total Percentage	100%	100%	100%
Total Number of Institutions	(225)	(91)	(256)
Replacement of Maintenance Equipment			
Increase	13	8	9
Decrease	13	28	18
Same	74	64	73
Total Percentage	100%	100%	100%
Total Number of Institutions	(224)	(90)	(256)
Building Maintenance Personnel			
Increase	19	8	14
Decrease	8	23	13
Same	73	69	73
Total Percentage	100%	100%	100%
Total Number of Institutions	(226)	(91)	(256)
Interior Maintenance of Utility System			
Increase	20	11	16
Decrease	3	4	3
Same	77	85	81
Total Percentage	100%	100%	100%
Total Number of Institutions	(223)	(91)	(257)
Exterior Maintenance of Utility System			
Increase	16	6	18
Decrease	3	5	4
Same	81	89	78
Total Percentage	100%	100%	100%
Total Number of Institutions	(216)	(91)	(257)
Maintenance of Central Utility Plants			
Increase	15	11	18
Decrease	4	6	2
Same	81	83	80
Total Percentage	100%	100%	100%
Total Number of Institutions	(208)	(80)	(245)

Table 14 (Con't)

Anticipated Changes in Level of Activity
for Plant Operation and Maintenance
by Expected Change in Fall Enrollment
(In Percentages)

Type of Activity and Direction Of Change	Institutions Expecting: Increased Enrollment	Decreased Enrollment	Relatively Constant Enrollment
Use of Gas, Electricity, Water, Etc.			
Increase	28	15	22
Decrease	23	39	33
Same	49	46	45
Total Percentage	100%	100%	100%
Total Number of Institutions	(225)	(91)	(258)
Utilities Maintenance Personnel			
Increase	14	4	10
Decrease	4	9	5
Same	82	87	85
Total Percentage	100%	100%	100%
Total Number of Institutions	(223)	(90)	(258)
Landscape and Grounds Maintenance			
Increase	21	19	24
Decrease	13	27	12
Same	66	54	64
Total Percentage	100%	100%	100%
Total Number of Institutions	(221)	(90)	(259)
Maintenance of Roads, Walkways			
Increase	23	12	18
Decrease	8	19	13
Same	69	69	69
Total Percentage	100%	100%	100%
Total Number of Institutions	(221)	(90)	(259)
Grounds Maintenance Equipment			
Increase	11	8	10
Decrease	9	28	17
Same	80	64	73
Total Percentage	100%	100%	100%
Total Number of Institutions	(222)	(90)	(258)
Grounds Maintenance Personnel			
Increase	10	7	12
Decrease	8	21	11
Same	82	72	77
Total Percentage	100%	100%	100%
Total Number of Institutions	(220)	(90)	(259)
Campus Security and Safety			
Increase	32	15	22
Decrease	3	6	4
Same	65	79	74
Total Percentage	100%	100%	100%
Total Number of Institutions	(223)	(91)	(258)
Maintenance of Security and Safety Equipment			
Increase	22	13	22
Decrease	1	0	2
Same	77	87	76
Total Percentage	100%	100%	100%
Total Number of Institutions	(223)	(91)	(257)

Table 14 (Con't)

Anticipated Changes in Level of Activity
for Plant Operation and Maintenance
by Expected Change in Fall Enrollment
(In Percentages)

Type of Activity and Direction Of Change	Institutions Expecting: Increased Enrollment	Decreased Enrollment	Relatively Constant Enrollment
Maintenance of Security and Safety Vehicles			
Increase	13	10	8
Decrease	3	6	4
Same	84	84	88
Total Percentage	100%	100%	100%
Total Number of Institutions	(211)	(83)	(252)
Fire Department and Security Personnel			
Increase	15	4	10
Decrease	2	8	5
Same	83	88	85
Total Percentage	100%	100%	100%
Total Number of Institutions	(213)	(86)	(247)
Conformity With OSHA Regulations			
Increase	41	39	49
Decrease	1	0	1
Same	58	61	50
Total Percentage	100%	100%	100%
Total Number of Institutions	(211)	(88)	(249)
Level of Custodial Services			
Increase	15	8	14
Decrease	13	15	14
Same	72	77	72
Total Percentage	100%	100%	100%
Total Number of Institutions	(226)	(91)	(259)
Garbage and Trash Disposal			
Increase	12	2	8
Decrease	2	1	3
Same	86	97	89
Total Percentage	100%	100%	100%
Total Number of Institutions	(226)	(91)	(259)
Costs of Custodial Equipment			
Increase	16	6	13
Decrease	9	14	9
Same	75	80	78
Total Percentage	100%	100%	100%
Total Number of Institutions	(226)	(91)	(258)
Custodial Personnel			
Increase	14	6	12
Decrease	12	21	14
Same	74	73	74
Total Percentage	100%	100%	100%
Total Number of Institutions	(225)	(90)	(259)

Appendix A:

Survey Questionnaire

OMB No. 99-R0265. Exp. 6/75

AMERICAN COUNCIL ON EDUCATION

Higher Education Facilities Survey

1. Enrollment at your institution in the fall of 1974 as compared to fall, 1973 is expected to: (Check only one)

   [] a. increase (by at least 2%)
   [] b. remain constant
   [] c. decrease (by at least 2%)

2. In the fall of 1974, academic space (i.e., primarily used for, or in support of, instruction, research, or administration) at your institution will be: (Check only one)

   [] a. considerably overcrowded
   [] b. somewhat overcrowded but manageable
   [] c. ample
   [] d. somewhat in excess of anticipated need
   [] e. considerably in excess of need

3. In the fall of 1974, non-academic space (e.g., dormitories, dining halls, student unions) at your institution will be: (Check only one)

   [] a. considerably overcrowded
   [] b. somewhat overcrowded but manageable
   [] c. ample
   [] d. somewhat in excess of anticipated need
   [] e. considerably in excess of need

4. Serious deficiencies or great excesses in space will occur in: (Check all that apply)

Deficiencies	Excesses	
[]	[]	a. classrooms
[]	[]	b. teaching laboratories and shops
[]	[]	c. research space
[]	[]	d. library and study space
[]	[]	e. office space
[]	[]	f. student services space
[]	[]	g. student housing
[]	[]	h. other space (Please identify) _____
	[]	i. no deficiency or excess expected

5. Approximately what percent of the total amount of space (academic and non-academic) on your campus, if converted for another use, would more adequately meet your needs? _____%

6. Of the total amount of space (academic and non-academic) available at your institution: (fill in the percentages)

   a. _____% is satisfactory in its present physical condition
   b. _____% is unsatisfactory and should be renovated
   c. _____% is unsatisfactory and should be replaced
   d. _____% is unsatisfactory and can be eliminated

7. Has your institution begun to evaluate the implications of the Occupational Safety and Health Act of 1970 (OSHA) with regard to your present facilities? ___Yes ___No

7a. If yes, would you estimate that the cost of compliance with OSHA regulations will be:

   [] a. minimal
   [] b. moderate
   [] c. substantial

8. Preventive maintenance activities on your campus in academic year 1974-75:

   [] a. will be largely deferred
   [] b. will be curtailed somewhat
   [] c. will be carried out on a timely schedule

9. Please indicate anticipated changes in levels of activity for plant operation and maintenance resulting from final budget approval for the coming academic year:

INCREASE	SAME	DECREASE	TYPE OF ACTIVITY
			Building Maintenance
[]	[]	[]	Interior and exterior maintenance of buildings
[]	[]	[]	Classroom and laboratory furniture and equipment
[]	[]	[]	Major repairs or renovation projects
[]	[]	[]	Replacement of equipment, materials and tools used in connection with building maintenance
[]	[]	[]	Building maintenance personnel
			Utilities (heating, cooling, electric, water, sanitation, etc.)
[]	[]	[]	Maintenance of utility distribution systems within buildings
[]	[]	[]	Maintenance of utility systems outside buildings
[]	[]	[]	Operation and maintenance of central utility plants
[]	[]	[]	Use of gas, electricity, water, etc.
[]	[]	[]	Utilities maintenance and operations personnel
			Landscaping and Grounds Maintenance
[]	[]	[]	Level or degree of landscaping and/or grounds maintenance
[]	[]	[]	Maintenance of roads, walk ways, parking areas, drainage, ditches, fences, etc.
[]	[]	[]	Operation and replacement of grounds maintenance equipment
[]	[]	[]	Grounds maintenance personnel
			Campus Security and Safety
[]	[]	[]	Level or degree of campus security and safety
[]	[]	[]	Maintenance of sprinkler systems, alarms, fire extinguishers and monitoring and protective devices
[]	[]	[]	Operation and replacement of security and safety vehicles
[]	[]	[]	Fire department and security personnel
[]	[]	[]	Occupational and Safety Health Act requirements
			Custodial and General Services
[]	[]	[]	Level or degree of custodial services
[]	[]	[]	Garbage and trash disposal
[]	[]	[]	Operating and replacement costs of custodial equipment
[]	[]	[]	Custodial personnel

THANK YOU FOR YOUR COOPERATION
Please return this form by:
July 15, 1974

TO: Higher Education Panel
American Council on Education
One Dupont Circle, N.W.
Washington, D.C. 20036

Person Completing this Form: _____

Office: _____

Telephone Number: _____

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Other Reports of the Higher Education Panel
American Council on Education

Blandford, B. and Dutton, D. **Survey of First-Year Graduate and Postdoctoral Enrollment in Science and Engineering.** Higher Education Panel Report, No. 1, August, 1971.

Blandford, B. and Dutton, D. **Research Support for Science Faculty.** Higher Education Panel Report, No. 2, November, 1971.

Astin, A., Blandford, B., and Mahn, T. **Freshman Class Vacancies in Fall 1971 and Recent Trends in Enrollment of Minority Freshmen.** Higher Education Panel Report, No. 3, February, 1972.

Changes in Graduate Programs in Science and Engineering 1970–72 and 1972–1974. Science Resources Studies Highlights. Washington: National Science Foundation, July, 1972.

Blandford, B. and Sell, C. **Enrollment of Junior-Year Students (1970 and 1971).** Higher Education Panel Report, No. 5, April, 1972.

Trexler, J. and Blandford, B. **What College Presidents Are Reading.** Higher Education Panel Report, No. 6, March, 1972.

Trexler, J. and Kent, L. **Commercial Theme-Writing Services.** Higher Education Panel Report, No. 7, June, 1972.

Furniss, W. T. **Faculty Tenure and Contract Systems: Current Practice.** ACE Special Report, July, 1972.

Bayer, A. E. and Astin, A. W. **War Protest on U.S. Campuses During April, 1972.** Higher Education Panel Report, No. 9, May, 1972.

Blandford, B. A. and Trexler, J. C. **Expected First-Year Graduate Enrollment in Science and Engineering, Fall 1972.** Higher Education Panel Report, No. 10, August, 1972.

Blandford, B. A. **Student Participation on Institutional Governing Boards.** Higher Education Panel Report, No. 11, October, 1972.

Dutton, J. E. and Blandford, B. A. **Enrollment of Junior-Year Students (1971 and 1972).** Higher Education Panel Report, No. 12, April, 1973.

Dutton, J. E. **Courses and Enrollment in Ethnic/Racial Studies.** Higher Education Panel Report, No. 14, August, 1973.

Dutton, J. E. and Jenkins, M. D. **The Urban Involvement of Colleges and Universities.** Higher Education Panel Report, No. 15, August, 1973.

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El-Khawas, E. H. and Kinzer, J. L. **The Impact of Office of Education Student Assistance Programs, Fall 1973.** Higher Education Panel Report, No. 18, April, 1974.

El-Khawas, E. H. and Kinzer, J. L. **Enrollment of Minority Graduate Students at Ph.D. Granting Institutions.** Higher Education Panel Report No. 19, August, 1974.

Single copies of the above reports may be obtained from the Higher Education Panel, American Council on Education, One Dupont Circle, Washington, D.C. 20036.